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EXAMINER	
MAI, KEVIN S	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/774,028	FAN ET AL.	
	Examiner	Art Unit	
	KEVIN S. MAI	2456	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action has been issued in response to Applicant's Amendment filed June 18, 2008.

2. Claims 21-23 and 26-31 have been amended. Claims 1-32 have been examined and are pending.

Response to Arguments

3. Applicant's arguments filed June 18, 2008 have been fully considered but they are not persuasive.

4. Applicant's arguments with respect to claim 1 regarding the port aggregation driver not being coupled to the TCP/IP stack via the INIC driver have been considered but they are not persuasive. Applicant argues that Craft does not disclose the components being connected via the INIC Driver, while examiner does not agree or disagree with this argument, examiner asserts that the specific limitation of being connected via the miniport does not add any additional functionality to the system. As disclosed below Craft and Diamant, in combination, disclose all functionality of the system claimed by the applicant. While the components may be connected in a slightly different configuration, all components and functionality have been disclosed by the references. Effectively this limitation is seen to be a design choice of the system. As such applicant's invention is still seen to be obvious in view of combined references Craft and Diamant.

5. Claims 2-20 remain rejected for similar reasons as those recited for claim 1.

6. Applicant's arguments with respect to claims 21-32 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 21-24 and 26-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6687758 B2 to Craft et al. (hereinafter "Craft").

9. **As to Claim 21**, Craft discloses **a system for communications, comprising: a first set of network interface cards comprising a second set and a third set** (Figure 1 of Craft discloses at least two INICs in blocks 22 and 25 which can be construed as the first set, and then each individual block can be seen as the second and third set)**, the second set comprising a network interface card that is capable of offloading one or more connections** (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections)**, the third set comprising one or more network interface cards that are not capable of providing an offload path** (Column 2 lines 30 – 33 of Craft discloses that

although FIG. 1 illustrates an embodiment with 2 INICs each having two ports, more or less INICs each having more or less ports are possible. Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Thus in the scenario of having at least one being equal to one it is seen that one set is capable of providing an offload path and the other set is not**; and**

an intermediate driver coupled to the second set and to the third set (Figure 1 of Craft discloses a port aggregation driver being coupled with the first INIC (block 22) and second INIC (block 25))**, the intermediate driver being part of a host computer** (Figure 1 of Craft discloses the intermediate driver being in the host computer) **and supporting teaming over the second set and the third set, the host computer supporting iWARP traffic** (Column 5 lines 27 – 29 of Craft discloses that the port aggregation driver is there to handle the port aggregation requirements imposed by the switch. This reads on the intermediate driver supporting teaming and then it was shown above that the driver is coupled to the second and third set and thus they also support teaming. As to supporting iWARP traffic, column 3 lines 43 – 47 of Craft discloses that the INIC chooses whether to send a packet to the host memory or to send the packet data directly to a destination in storage. Then in column 4 lines 40 – 41 of Craft it discloses that it is sent by direct memory access (DMA))

Craft does not explicitly disclose supporting iWARP traffic, however, in view of Craft disclosing supporting DMA it is seen that supporting iWARP traffic would be obvious. This is because iWARP is simply an updated version of DMA.

wherein fail over and the teaming are only performed by the host computer and/or one or more of the network interface cards (Column 5 lines 25-55 of Craft disclose how teaming and fail-over are performed by the port aggregation driver (in the host computer) and the multiple INICs).

10. **As to Claim 22**, Craft discloses **the system according to claim 21, wherein the second set provides a kernel bypass path and wherein the third set does not provide a kernel bypass path** (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Since Craft discloses having at least two INICs, the scenario where at least one is equal to only one would cause one set to provide a bypass path and the other to not provide one).

11. **As to Claim 23**, Craft discloses the invention as claimed as described in claim 21, **wherein the second set is associated with a system that is capable of offloading one or more connections** (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections)**, wherein the system that is capable of offloading one or more connections offloads a particular connection, and wherein packets carried by the particular offloaded connection bypass the intermediate driver** (Column 4 lines 44 – 49 of Craft discloses that fast-path messages to be transmitted from the host to the client are diverted from an application interface to the ATCP protocol processing stack which sends the

message data to the INICs. Where the ATCP protocol processing stack is defined in column 3 lines 17 – 18 of Craft to be used to offload selected network connections to the INICs. Thus it is the offload system that sends data to the INICs. Column 3 lines 20-25 discloses the INIC device driver diverts fast-path packets received from the INICs to the ATCP stack).

12. **As to Claim 24**, Craft discloses **the system according to claim 21, wherein intermediate driver supports teaming over the first set** (Column 5 lines 27 – 29 of Craft discloses that the port aggregation driver is there to handle the port aggregation requirements imposed by the switch. Figure 1 of Craft discloses that the driver is coupled to both the second and third set, which makes up the first set. Thus teaming is supported over the first set).

13. **As to Claim 26**, Craft discloses **a method for communicating, comprising: (a) teaming a plurality of network interface cards using an intermediate driver of a host computer** (Column 5 lines 25-55 of Craft disclose how teaming and fail-over are performed by the port aggregation driver (in the host computer) and the multiple INICs), **wherein the teaming is only performed by the host computer and/or the plurality of network interface cards** (Column 5 lines 25-55 of Craft disclose how teaming and fail-over are performed by the port aggregation driver (in the host computer) and the multiple INICs), **wherein plurality of network interface cards support remote direct memory access (RDMA) traffic** (Column 3 lines 43 – 47 of Craft discloses that the INIC chooses whether to send a packet to the host memory or to send the packet data directly to a destination in storage. Then in column 4 lines 40 – 41 of Craft it discloses that it is sent by direct memory access (DMA));

(b) adapting at least one network interface card of the plurality of network interface cards to provide an offload path; and (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections).

(c) adapting remaining network interface cards of the plurality of network interface cards not to provide an offload path (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Since Craft discloses having at least two INICs, the scenario of having at least one being equal to one it is seen that one set is capable of providing an offload path and the other set is not).

14. **As to Claim 27**, Craft discloses **the method according to claim 26, wherein (b) comprises solely associating a system that is capable of offloading one or more connections with a single network interface card of the plurality of network interface cards** (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Where at least one covers the scenario of only one, thus the system would be solely being associated with the INIC).

15. **As to Claim 28**, Craft discloses **a method for communicating, comprising: teaming a plurality of network interface cards of a host computer, the plurality of network interface cards not providing an offload path that bypasses a kernel of the host computer;**

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Since Craft discloses having at least two INICs, the scenario of having at least one being equal to one it is seen that one set is capable of providing an offload path and the other set is not. Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs notwithstanding individual INIC control and processing of each fast-path connection (where fast-path connections are read as offloading). Thus the additional network card supports port aggregation notwithstanding offloading (fast-path connections));

adding an additional network interface card to the host computer, the additional network interface card providing an offload path that bypasses the kernel of the host computer

(Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. As to the card being added this is seen as the system being dynamic, such that cards can be added and then teamed with the currently running network cards. This is disclosed by Craft in the form of fail-over. Column 5 lines 53 – 55 of Craft discloses that fail-over switching mechanism are provided across the multiple INICs. Then in column 8 lines 30 – 31 it discloses the INICs getting reset due to failure. This is seen to be the same as adding because during the INIC failure the teaming is only done among the working INICs. Then after the reset the failed INIC is brought back into the team. Thus it is seen as having added the INIC);

teaming the plurality of network interface cards and the additional network interface card (Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs notwithstanding individual INIC control and processing of each fast-path connection (where fast-path connections are read as offloading). Thus the additional network card supports port aggregation notwithstanding offloading (fast-path connections))**; and**

providing layer 2 load balancing over the plurality of network interface cards and the additional network interface card (Column 6 lines 35 – 37 of Craft discloses that the port aggregation switch may change the port selection for load balancing purposes).

16. **As to Claim 29**, Craft discloses **the method according to claim 28, further comprising:**

handling packets of a particular connection only via the additional network interface card, the particular connection being maintained by a system that is capable of offloading traffic from the host protocol processing stack (Column 3 lines 16 – 20 of Craft discloses that the ATCP protocol stack is used to offload selected network connections to the INICs for fast-path processing of messages corresponding to those selected connections).

17. **As to Claim 30**, Craft discloses **the method according to claim 28, wherein the additional network interface card, which has been teamed with the plurality of network interface cards, is adapted to provide an upload path that passes through the kernel of the**

host computer (Figure 1 of Craft discloses how both INICs contain normal upload paths through the kernel of the host computer).

18. **As to Claim 31**, Craft discloses **the method according to claim 28, further comprising:**

processing packets of a particular connection via a host protocol processing stack, the particular connection not being an offloaded connection although being maintained by the system that is capable of offloading traffic from the host protocol stack (Column 3 lines 29 – 33 of Craft discloses that the ATCP functions such as creating and handing out fast-path connections to INICs may be included in an integrated protocol stack that also includes instructions for conventional protocol processing. This teaches a system that can not only control offload traffic but can also maintain regular traffic).

19. **As to Claim 32**, Craft discloses **the method according to claim 31, further comprising:**

transmitting the processed packets only through the additional network interface card (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Where at least one covers the scenario of only one, thus the system would be only going through that INIC).

20. Claims 1-10, 12-20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Craft and further in view of U.S. Patent No. 6941377 B1 to Diamant et al. (hereinafter "Diamant").

21. **As to Claim 1**, Craft discloses **a system for communications, comprising:**
a transport layer/network layer processing stack (Column 3 lines 12 – 13 of Craft discloses that the host memory contains a conventional protocol processing stack)**; and**
an intermediate driver coupled to the transport layer/network layer processing stack via a first miniport (Column 5 lines 27 – 29 of Craft discloses a port aggregation driver, read to be the intermediate driver, that is disposed between the INIC device driver, read to be the miniport driver, and the protocol processing stacks) **and** Craft does not explicitly disclose **a second miniport,**

However, Diamant discloses this (Figure 1 of Diamant discloses an intermediary layer, read to be the intermediate driver, connected to multiple NIC drivers. Which are then seen to be instances of a second miniport)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the usage of teaming and a dedicated network interface card for offloading as disclosed by Craft, with the system with two miniports as disclosed by Diamant. One of ordinary skill in the art at the time the invention was made would have been motivated to combine to provide an interface that can team different types of NICs. Although Craft discloses having multiple NICs it does not disclose having individual drivers for them. Thus it is seen Craft would be unable to team different NICs. Diamant solves this by suggesting the

intermediary layer can be used to accept many upper-layer protocols, in addition to multiple drivers below it (Column 3 lines 13 – 20).

Craft discloses **wherein the first miniport supports teaming** (Column 5 lines 49 – 51 of Craft discloses that the INIC device driver can control the two shown INICs with signals flowing from the port aggregation driver. Since it receives signals from the port aggregation driver the INIC device driver must support teaming. It is read that a miniport is a device driver and thus is read upon by the INIC device driver)**, and**

wherein the second miniport is dedicated to a system that can offload traffic from the transport layer/network layer processing stack (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections)**.**

22. **As to Claim 2**, Craft-Diamant discloses the invention as claimed as described in claim 1, **a first network interface card coupled to the intermediate driver** (Figure 1 of Craft shows the port aggregation driver being coupled with the first INIC (block 22))**; and**

a second network interface card coupled to the intermediate driver (Figure 1 of Craft shows the port aggregation driver being coupled with the second INIC (block 25))**,**

wherein the second network interface card supports the system that can offload traffic from the transport layer/network layer processing stack (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections)**, and**

wherein the first miniport, the first network interface card and the second network interface card support teaming (Column 5 lines 49 – 51 of Craft discloses that the INIC device driver can control the two shown INICs with signals flowing from the port aggregation driver. Since it receives signals from the port aggregation driver the INIC device driver must support teaming. It is read that a miniport is a device driver and thus is read upon by the INIC device driver. The two INICs that are connected represent the first and second network interface cards and because they also get signals via the INIC device driver from the port aggregation driver they must also support teaming).

23. **As to Claim 3**, Craft-Diamant discloses the invention as claimed as described in claim 2, **wherein the first network interface card comprises a plurality of network interface cards** (Column 2 lines 30 – 33 of Craft discloses that although FIG. 1 illustrates an embodiment with 2 INICs each having two ports, more or less INICs each having more or less ports are possible).

24. **As to Claim 4**, Craft-Diamant discloses the invention as claimed as described in claim 2, **wherein the second network interface card comprises a remote-direct-memory-access-enabled (RDMA-enabled) network interface card** (Column 3 lines 43 – 47 of Craft discloses that the INIC chooses whether to send a packet to the host memory or to send the packet data directly to a destination in storage. Then in column 4 lines 40 – 41 of Craft it discloses that it is sent by direct memory access (DMA)).

25. **As to Claim 5**, Craft-Diamant discloses the invention as claimed as described in claim 2, **wherein the second network interface card is the only network interface card that supports traffic from the system that can offload traffic from the transport layer/network layer processing stack** (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Where at least one covers the scenario of only one, thus that INIC would be the only network interface card that support traffic from the offloading system).

26. **As to Claim 6**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the transport layer/network layer processing stack comprises a transmission control protocol/internet protocol (TCP/IP) stack** (Column 2 lines 53 – 55 of Craft discloses network connections, such as Transmission Control Protocol (TCP) connections, may be initiated between the host and any of the clients using IP).

27. **As to Claim 7**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the first miniport comprises a virtual miniport instance** (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the system of claim 1 as disclosed by Craft-Diamant, with virtual drivers as disclosed by Diamant. One of ordinary skill in the art at the time the invention was made would have been motivated to use virtual drivers to (Diamant Column 3 lines 27 – 29) provide

opportunity to augment network interface drivers with functionality not originally planned for network interfaces.

28. **As to Claim 8**, Craft-Diamant discloses the invention as claimed as described in claim 7, **wherein the virtual miniport instance comprises a virtual miniport instance adapted for teamed traffic** (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver that is connected to multiple NICs and the system is explained in column 3 lines 17 – 18 of Diamant to allow for load balancing and fail-over which implies teaming)**.**

Examiner recites the same rationale to combine used in claim 7.

29. **As to Claim 9**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the second miniport comprises a virtual miniport instance** (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver)**.**

Examiner recites the same rationale to combine used in claim 7.

30. **As to Claim 10**, Craft-Diamant discloses the invention as claimed as described in claim 9, **wherein the virtual miniport instance comprises an RDMA-enabled virtual miniport instance** (Column 3 lines 43 – 47 of Craft discloses that the INIC chooses whether to send a packet to the host memory or to send the packet data directly to a destination in storage. Then in column 4 lines 40 – 41 of Craft it discloses that it is sent by direct memory access (DMA) and

Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver).

Examiner recites the same rationale to combine used in claim 7.

31. **As to Claim 12**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the second miniport supports traffic that is processed by the transport layer/network layer processing stack** (Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs notwithstanding individual INIC control and processing of each fast-path connection. This implies that the all INICs in the system all have teaming support regardless if or if not they support offloading thus they are capable of supporting the traffic of the regular processing stack).

32. **As to Claim 13**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the second miniport supports traffic that has not been offloaded by the system that can offload traffic from the transport layer/network layer processing stack** (Column 5 lines 53 – 55 of Craft disclose that port aggregation and fail-over switching mechanisms are provided across multiple INICs. This implies that the multiple INICs in the system all have teaming support and thus are capable of supporting the traffic of the regular processing stack including traffic that has not been offloaded).

33. **As to Claim 14**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein traffic that has been offloaded by the system that can offload traffic from the**

transport layer/network layer processing stack bypasses the transport layer/network layer processing stack and the intermediate driver (Column 4 lines 44 – 49 of Craft discloses that fast-path messages to be transmitted from the host to the client are diverted from an application interface to the ATCP protocol processing stack which sends the message data to the INICs. Where the ATCP protocol processing stack is defined in column 3 lines 17 – 18 of Craft to be used to offload selected network connections to the INICs. Thus it is the offload system that sends data to the INICs).

34. **As to Claim 15**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the intermediate driver supports teaming** (Column 5 lines 27 – 29 of Craft discloses that the port aggregation driver is there to handle the port aggregation requirements imposed by the switch).

35. **As to Claim 16**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the intermediate driver comprises a network driver interface specification (NDIS) intermediate driver** (Column 2 lines 43 – 45 of Diamant discloses an intermediary layer using LSL or NDIS).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the system of claim 1 as disclosed by Craft-Diamant, with the usage of an NDIS intermediate driver as disclosed by Diamant. One of ordinary skill in the art at the time the invention was made would have been motivated to combine because although Craft does not explicitly disclose a standard to use for its disclosed port aggregation driver it would be

beneficial to use a well known standard, such as NDIS, to increase the usability of Craft's invention.

36. **As to Claim 17**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein the intermediate driver is aware of the system that can offload traffic from the transport protocol/network protocol processing stack** (Column 5 lines 1 – 10 of Craft discloses that since the fast-path conditions described involve offloading control and processing of a connection to either of the INICs in association with the ports the fast-path and port aggregation protocol need to be synchronized. Thus the port aggregation driver, which has been read to be the intermediate driver, is synchronized, and thus aware, of the offloading control).

37. **As to Claim 18**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein teaming supports load balancing** (Column 6 lines 35 – 37 of Craft discloses that the port aggregation switch may change the port selection for load balancing purposes).

38. **As to Claim 19**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein teaming supports fail over** (Column 5 lines 53 – 54 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs).

39. **As to Claim 20**, Craft-Diamant discloses the invention as claimed as described in claim 1, **wherein teaming supports virtual network capabilities** (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver that is connected to

multiple NICs and the system is explained in column 3 lines 17 – 18 of Diamant to allow for load balancing and fail-over which implies teaming. If the teaming is made to work with the Virtual NIC Drivers it must support virtual network capabilities).

Examiner recites the same rationale to combine used in claim 7.

40. **As to Claim 25**, discloses the invention as claimed as described in claim 21, **a host protocol processing stack coupled to the intermediate driver via a first virtual miniport instance and** (Column 5 lines 27 – 29 of Craft discloses a port aggregation driver, read to be the intermediate driver, that is disposed between the INIC device driver, read to be the miniport driver, and the protocol processing stacks) **and** Craft does not explicitly disclose **a second virtual miniport instance,**

However, Diamant discloses this (Figure 1 of Diamant discloses an intermediary layer, read to be the intermediate driver, connected to multiple NIC drivers. Which are then seen to be instances of a second miniport)

Examiner recites the same rationale to combine used in claim 1.

Diamant further discloses the miniport's being virtual (Figure 2 of Diamant discloses a Virtual NIC Driver which is read to be analogous to a miniport driver)

Examiner recites the same rationale to combine used in claim 7.

wherein the first virtual miniport instance is associated with traffic of the second set and the third set (Column 5 lines 53 – 55 of Craft discloses that port aggregation and fail-over switching mechanisms are provided across multiple INICs notwithstanding individual INIC control and processing of each fast-path connection. Such that there exists a driver that would

team both the set that did not offload and the set that does offload. Thus that driver would be associated with the traffic of both sets**, and**

wherein the second virtual miniport instance is associated solely with traffic of the third set (Column 1 lines 66 – 67 and Column 2 lines 1 – 2 of Craft discloses that at least one intelligent network interface card (INIC) is coupled to a host computer to offload protocol processing for multiple network connections. Where at least one covers the scenario of only one, thus the system would be solely being associated with the INIC)**.**

41. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Craft-Diamant as applied to claim 1 above and further in view of "Winsock Direct and Protocol Offload on SANs" to Microsoft. (hereinafter "Microsoft").

42. **As to Claim 11**, Craft-Diamant discloses the invention as claimed as described in claim 1. Craft-Diamant does not explicitly disclose **wherein the system that can offload traffic from the transport layer/network layer processing stack comprises a Winsock Direct system**

However, Microsoft discloses this (Page 2 of Microsoft discloses that Winsock Direct provides offload of the protocol stack)**.**

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the system of claim 1 as disclosed by Craft-Diamant, with the use of Winsock Direct as disclosed by Microsoft. One of ordinary skill in the art at the time the invention was made would have been motivated to utilize Winsock Direct because (Microsoft

page 1) Winsock Direct can increase system performance by freeing up CPU and memory bandwidth resources to be used by the application.

Conclusion

43. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEVIN S. MAI whose telephone number is (571)270-5001. The examiner can normally be reached on Monday through Friday 7:30 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KSM

/Bunjob Jaroenchonwanit/
Supervisory Patent Examiner, Art Unit 2456